



Reduced carcinogens. Premium taste.™

FTC Method Chart

The Federal Trade Commission (FTC) method for comparing the yields of a wide range of chemical constituents in the mainstream smoke from a burning cigarette was developed by the U.S. government in 1967. The FTC method uses a specific puffing regimen of a 35 ml puff of 2 seconds in duration every 60 seconds with none of the filter ventilation holes blocked. A common criticism of the FTC method is that it does not accurately mimic the smoking behavior of most smokers thereby underestimating the yields of smoke constituents inhaled.

* Denotes Carcinogens

** Denotes Results Generated by Vector Tobacco

King-Size Full Flavor	Omni	Leading Competitive Brand	% Change
Ammonia (ng/cig)	15.5	21.9	-29%
Aromatic Amines			
1-aminonaphthalene (ng/cig)	4.2	8.5	-51%
2-aminonaphthalene (ng/cig) *	3.24	4.77	-32%
3-aminobiphenyl (ng/cig) *	1.17	1.12	NSD
4-aminobiphenyl (ng/cig) *	0.90	0.89	NSD
PAHs			
benzo[a]pyrene (ng/cig) *	5.37	8.40	-36%
acenaphthylene (ng/cig) * **	23.88	48.59	-51%
acenaphthene (ng/cig) * **	18.37	31.30	-41%
dibenzofuran (ng/cig) * **	32.61	54.59	-40%
fluorene (ng/cig) * **	66.68	113.82	-41%
phenanthrene (ng/cig) * **	63.53	93.65	-32%
anthracene (ng/cig) * **	16.62	24.11	-31%
2-methylanthracene (ng/cig) * **	27.11	39.38	-31%
fluoranthene (ng/cig) * **	25.37	29.84	-15%
pyrene (ng/cig) * **	19.53	24.48	-20%
2,3-benzofluorene (ng/cig) * *	29.98	36.12	-17%
1,2-benzanthracene (ng/cig) * **	7.46	8.76	-15%
chrysene (ng/cig) * **	11.09	13.22	-16%
benzo[b,k]fluoranthene (ng/cig) * **	5.55	5.82	-5%
benzo[e]pyrene (ng/cig) *	2.67	3.13	-15%
Carbonyls			

formaldehyde ($\mu\text{g}/\text{cig}$)*	52.8	31.4	68%
acetaldehyde ($\mu\text{g}/\text{cig}$)*	430	686	-37%
acetone ($\mu\text{g}/\text{cig}$)	138	303	-54%
acrolein ($\mu\text{g}/\text{cig}$)	44.5	78.5	-43%
propionaldehyde ($\mu\text{g}/\text{cig}$)	28.0	58.3	-52%
crotonaldehyde ($\mu\text{g}/\text{cig}$)	14.5	31.6	-54%
butyraldehyde ($\mu\text{g}/\text{cig}$)	19.9	42.6	-53%
methylethylketone ($\mu\text{g}/\text{cig}$)	32.9	95.6	-66%
Hydrogen Cyanide ($\mu\text{g}/\text{cig}$)			
	125.4	172.6	-27%
Carbon Monoxide (mg/cig)			
	13.5	13.0	NSD
Nitric Oxide ($\mu\text{g}/\text{cig}$)			
	572	213	168%
Mercury (ng/cig)			
	1.68	2.45	-31%
Trace Metals			
palladium (ng/cig)	5.2	BQL	N.A.
nickel (ng/cig)*	BQL	BQL	N.A.
lead (ng/cig)*	5.4	25.9	-79%
cadmium (ng/cig)*	36.2	64.0	-43%
chromium (ng/cig)*	BQL	BQL	N.A.
arsenic (ng/cig)*	3.6	5.9	-39%
selenium (ng/cig)	BQL	BQL	N.A.
Nitrosamines			
NNN (ng/cig)*	142	187	-24%
NNK (ng/cig)*	59	125	-53%
NAT (ng/cig)	161	146	10%
NAB (ng/cig)	29.2	20.7	41%
Semivolatiles			
pyridine ($\mu\text{g}/\text{cig}$)	2.87	10.66	-73%
3-vinylpyridine ($\mu\text{g}/\text{cig}$)	1.05	3.29	-68%
quinoline (ng/cig)	205	400	-49%
Phenols			
catechol ($\mu\text{g}/\text{cig}$)*	28.3	49.7	-43%
phenol ($\mu\text{g}/\text{cig}$)	8.4	16.7	-50%
hydroquinone ($\mu\text{g}/\text{cig}$)	8.1	46.8	-83%
resorcinol ($\mu\text{g}/\text{cig}$)	0.53	1.57	-66%
m,p-cresol ($\mu\text{g}/\text{cig}$)	5.3	11.2	-53%
o-cresol ($\mu\text{g}/\text{cig}$)	1.93	4.24	-54%

Tar (mg/cig)	12.1	14.5	-17%
Nicotine (mg/cig)	0.72	1.04	-30%
Volatiles			
1,3-butadiene (µg/cig)	32.0	48.4	-34%
isoprene (µg/cig)*	228	524	-56%
acrylonitrile (µg/cig)*	6.9	13.5	-49%
benzene (µg/cig)*	23.7	51.3	-54%
toluene (µg/cig)	33.2	90.9	-63%
styrene (µg/cig)*	3.9	11.4	-66%

BQL = Below Quantifiable Limits

NSD = No Statistical Difference

N.A. = Not Applicable

King-Size Lights	Omni	Leading Competitive Brand	% Change
Ammonia (µg/cig)	14.2	14.9	-5%
Aromatic Amines			
1-aminonaphthalene (ng/cig)	5.0	13.0	-62%
2-aminonaphthalene (ng/cig)*	3.81	9.01	-58%
3-aminobiphenyl (ng/cig)*	1.14	1.92	-41%
4-aminobiphenyl (ng/cig)*	0.85	1.51	-44%
PAHs			
benzo[a]pyrene (ng/cig)*	5.41	5.53	-2%
acenaphthylene (ng/cig)*	33.39	43.37	-23%
acenaphthone (ng/cig)*	24.74	30.33	-18%
dibenzofuran (ng/cig)*	49.03	50.62	-3%
fluorene (ng/cig)*	104.11	117.84	-12%
phenanthrene (ng/cig)*	86.63	98.42	-12%
anthracene (ng/cig)*	22.13	30.22	-27%
2-methylanthracene (ng/cig)*	32.26	40.20	-20%
fluoranthene (ng/cig)*	31.44	33.15	-5%
pyrene (ng/cig)*	23.19	27.43	-15%
2,3-benzofluorene (ng/cig)*	27.19	32.47	-16%
1,2-benzanthracene (ng/cig)*	7.77	9.01	-14%
chrysene (ng/cig)*	11.69	14.05	-17%
benzo[b]kifluoranthene (ng/cig)*	5.25	5.54	-5%
benzo[e]pyrene (ng/cig)*	2.36	2.76	-14%
indeno[1,2,3-cd]pyrene (ng/cig)*	2.82	2.93	-4%

	1.26	1.40	-10%
Carbonyls			
formaldehyde ($\mu\text{g}/\text{cig}$)	41.3	26.3	57%
acetaldehyde ($\mu\text{g}/\text{cig}$)	467	643	-27%
acetone ($\mu\text{g}/\text{cig}$)	152	271	-44%
acrolein ($\mu\text{g}/\text{cig}$)	37.3	66.7	-44%
propionaldehyde ($\mu\text{g}/\text{cig}$)	31.8	55.4	-43%
crotonaldehyde ($\mu\text{g}/\text{cig}$)	12.1	22.2	-45%
butyraldehyde ($\mu\text{g}/\text{cig}$)	18.1	33.1	-45%
methyl ethyl ketone ($\mu\text{g}/\text{cig}$)	39.3	87.3	-55%
Hydrogen Cyanide ($\mu\text{g}/\text{cig}$)			
	119	155	-23%
Carbon Monoxide (mg/cig)			
	15.7	12.4	10%
Nitric Oxide ($\mu\text{g}/\text{cig}$)			
	602	223	170%
Mercury (ng/cig)			
	1.7	2.2	-22%
Trace Metals			
nickel (ng/cig)	*	*	n/a
lead (ng/cig)	4.3	17.9	-76%
cadmium (ng/cig)	25.3	51.9	-51%
chromium (ng/cig)	*	*	n/a
arsenic (ng/cig)	2.9	3.9	-26%
selenium (ng/cig)	*	*	n/a
palladium (ng/cig)	3.6	*	n/a
Nitrosamines			
NNN (ng/cig)	132	134	-1%
NNK (ng/cig)	48	100	-53%
NAT (ng/cig)	141	114	24%
NAB (ng/cig)	26.6	16.3	63%
Semivolatiles			
pyridine ($\mu\text{g}/\text{cig}$)	2.88	6.64	-57%
3-vinylpyridine ($\mu\text{g}/\text{cig}$)	1.11	1.60	-30%
quinoline (ng/cig)	290	300	-3%
Phenols			
catechol ($\mu\text{g}/\text{cig}$)	29.1	36.7	-21%
phenol ($\mu\text{g}/\text{cig}$)	8.6	7.9	9%
hydroquinone ($\mu\text{g}/\text{cig}$)	11.4	34.9	-67%

resorcinol ($\mu\text{g}/\text{cigt.}$)			
resorcinol ($\mu\text{g}/\text{cig}$)	0.58	1.01	-43%
m,p-cresol ($\mu\text{g}/\text{cig}$)			
m,p-cresol ($\mu\text{g}/\text{cig}$)	5.51	5.97	-8%
o-cresol ($\mu\text{g}/\text{cig}$)			
o-cresol ($\mu\text{g}/\text{cig}$)	2.12	2.11	0%
Tar (mg/cig)			
Tar (mg/cig)	10.8	10.4	4%
Nicotine (mg/cig)			
Nicotine (mg/cig)	0.67	0.81	-17%
Volatiles			
1,3-butadiene ($\mu\text{g}/\text{cig}$)*			
1,3-butadiene ($\mu\text{g}/\text{cig}$)	26.2	34.1	-23%
isoprene ($\mu\text{g}/\text{cig}$)			
isoprene ($\mu\text{g}/\text{cig}$)	221	406	-46%
acrylonitrile ($\mu\text{g}/\text{cig}$)*			
acrylonitrile ($\mu\text{g}/\text{cig}$)	7.1	12.2	-41%
benzene ($\mu\text{g}/\text{cig}$)*			
benzene ($\mu\text{g}/\text{cig}$)	25.2	48.5	-48%
toluene ($\mu\text{g}/\text{cig}$)			
toluene ($\mu\text{g}/\text{cig}$)	35.1	85.6	-58%
styrene ($\mu\text{g}/\text{cig}$)*			
styrene ($\mu\text{g}/\text{cig}$)	3.7	7.4	-51%

BQL = Below Quantifiable Limits

NSD = No Statistical Difference

N.A. = Not Applicable

Footnotes:

* **Denotes Carcinogens** - Several groups have developed lists of carcinogens in tobacco smoke: the International Agency for Research on Cancer (IARC); the US Surgeon General's list of harmful constituents in tobacco smoke; the National Toxicology Program; the American Health Foundation. In addition, there is also other research. Although these lists vary, somewhere between 40-70 of the approximately 5,000 compounds in tobacco smoke are considered to be carcinogenic, probably carcinogenic, or possibly carcinogenic in humans.

** **Denotes Results Generated by Vector Tobacco** - Omni cigarettes have been extensively tested for reduced levels of carcinogens and other toxins in both mainstream and sidestream smoke. The following chart provides Omni test results from an independent laboratory using both the FTC and the Massachusetts methods of analysis. The chart also includes Omni test results, generated by Vector Tobacco, using innovative technologies to determine the concentrations of a number of polycyclic aromatic hydrocarbons (PAHs) that are not currently examined by any independent laboratory.

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